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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/819,720

03/29/2001

Mitsuo Yasushi

P107156-00061

4074

7590

05/05/2004

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EXAMINER

LAO, TIM P

ART UNIT	PAPER NUMBER
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2655

DATE MAILED: 05/05/2004

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/819,720

Applicant(s)

YASUSHI ET AL.

Examiner

Tim Lao

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Drawings

1. Figure 2A should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.


The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.



4. Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Grill et al. ("Information Technology - very low bitrate audio-visual coding," Part 3: Audio, ISO/IEC FCD 14496-3 Subpart 1, May 1998, hereinafter "Grill").

<p>Claim(s) 1</p>	<p><u>Grill discloses:</u></p> <p>An audio information reproducing method (p.22, Fig.1) wherein audio information (p.22, 'Input Signal') read from an audio information source (p.22, Fig. 1, 'Decoder') is at first stored in a buffer memory (p.22, Fig.1, 'Buffer Memory'), the stored audio information is then read out at a preset speed magnification (p.20, §4.1.2, $\text{SpeedControlFactor}=1.0$=normal speed), and reproduced upon receiving a reproducing speed conversion treatment (p.22, eq. on last line, $1 < \text{SpeedControlFactor} \leq 2$; p.24, eq. after 1st ¶, $0.5 \leq \text{SpeedControlFactor} < 1$), said method comprising:</p> <p>sending (p.22, Fig.1, 'Waveform Extraction') a request for reading audio information to the audio information source in accordance with an amount of information accumulated in the buffer memory; (p.21, §4.1.3)</p> <p>reading (p.22, Fig.1, 'Waveform Extraction') a predetermined amount of audio information (e.g., original waveforms A and B with $\text{Length}=\text{LW}$, see Fig.2a and Fig.3a) from the buffer memory in accordance with the preset speed magnification (e.g., normal speed), and</p> <p>reproducing the predetermined amount of audio information (waveforms C and D with length L for time-scale compression, see Fig.2c; waveforms A, C, and B for time-scale expansion, Fig.3c) after performing a reproducing speed conversion treatment ($1 < \text{SpeedControlFactor} \leq 2$ for time-scale compression, p.22, eq. on last line; $0.5 \leq \text{SpeedControlFactor} < 1$ for time-scale expansion, p.24, eq. after 1st ¶) on the audio information. (see p.22, §4.1.3.1; p.23, §4.1.3.2)</p> <p><i>{Waveform C contains information from waveforms A and B.}</i></p>
<p>Claim(s) 4</p>	<p><u>Grill discloses:</u></p> <p>an audio information source; (p.22, Fig.1, 'Decoder')</p>

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	<p>a buffer memory (p.22, Fig.1, 'Buffer Memory') for storing audio information read from the audio information source;</p> <p>speed magnification setting means (p.20, §4.1.2, 'SpeedControlFactor') for setting a reproducing speed magnification ($1 < \text{SpeedControlFactor} \leq 2$ for time-scale compression, p.22, eq. on last line; $0.5 \leq \text{SpeedControlFactor} < 1$ for time-scale expansion, p.24, eq. after 1st ¶) for use in reading the audio information stored in the buffer memory; and</p> <p>signal processing means (Fig.1: 'Waveform Extraction', 'Error minimization', 'Overlap Addition', 'Waveform Composition') capable of sending a request for reading audio information to the audio information source in accordance with an amount of information accumulated in the buffer memory, reading a predetermined amount of audio information (e.g., original waveforms A and B with Length=LW, see Fig.2a and Fig.3a) from the buffer memory in accordance with the preset speed magnification ($\text{SpeedControlFactor}=1.0$=normal speed, p.20, §4.1.2), and reproducing the predetermined amount of audio information (waveforms C and D with length L for time-scale compression, see Fig.2c; waveforms A, C, and B for time-scale expansion, Fig.3c) after performing a reproducing speed conversion treatment ($1 < \text{SpeedControlFactor} \leq 2$ for time-scale compression, p.22, eq. on last line; $0.5 \leq \text{SpeedControlFactor} < 1$ for time-scale expansion, p.24, eq. after 1st ¶) on the audio information. (see p.22, §4.1.3.1; p.23, §4.1.3.2)</p>
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Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 3, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grill in view of Miyasaka (U.S. Patent 5,845,247).

Claim(s)	<u>Grill shows:</u>
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An audio information reproducing method wherein audio information read from an audio information source is at first stored in a buffer memory, the stored audio information is then read out at a preset speed magnification, and reproduced upon receiving a reproducing speed conversion treatment, said method comprising:

successively cutting out, in accordance with window functions (e.g., half triangular window, p.24, 1st ¶; see dash line for waveform A of Fig.2a), first portions (e.g., waveform A and D) of the audio information, connecting together the first portions (e.g., waveform C and D, Fig.3c), and rendering the mutually connected first portions to serve as an output for converting a reproducing speed ($1 < \text{SpeedControlFactor} \leq 2$ for time-scale compression, p.22, eq. on last line) in a first channel (see Fig.3c);

{1. The waveform in Fig.2a is a continuous waveform. Therefore, the half-triangular window can be applied to waveform A, B, and D as well as successive waveforms.

2. Waveform C has the same information as waveform A. Therefore, mutually connected waveform C and D is the same as waveform A and D.}

successively cutting out, in accordance with window functions (e.g., half triangular window, p.24, 1st ¶; see dash line for waveform A of Fig.2a), second portions (e.g., waveform B and D) of the audio information, connecting together the second portions (waveform C and D, Fig.3c), and rendering the mutually connected second portions to serve as an output for converting a reproducing speed ($1 < \text{SpeedControlFactor} \leq 2$ for time-scale compression, p.22, eq. on last line); and

{1. The waveform in Fig.2a is a continuous waveform. Therefore, the half-triangular window can be applied to waveform A, B, and D as well as successive waveforms.

2. Waveform B has the same information as waveform A. Therefore, mutually connected waveform C and D is the same as waveform B and D.}

Grill does not show:

rendering the output of the second portions in a second channel;

reproducing the audio information independently through the first and second channels.

Miyasaka teaches:

	<p>rendering the output of the second portions in a second channel; (Fig.1: 106)</p> <p>reproducing the audio information independently through the first and second channels. (Fig.1: 105 and 106)</p> <p>It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the audio reproducing information method of Grill to include the multi-channel time-scaling method of Miyasaka in order to reproduce the audio information independently through the first and second channels. Multi-channel audio signals provide higher audio quality than mono-channel.</p>
Claim(s) 3	<p><u>Grill does not show:</u></p> <p>An audio information reproducing method according to claim 2, wherein the first portions and the second portions of the audio information are variable in their extension/compression rates in accordance with the amplitudes of these portions.</p> <p><u>Miyasaka teaches:</u></p> <p>audio information are variable (e.g., arbitrary speed desired by the user, col.17, ll.11-13) in their extension/compression rates in accordance with the amplitudes (col.17, ll.2-4) of these portions. (col.17, ll.1-13)</p> <p>It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the audio reproducing information method of Grill to include the dependency of rates on amplitudes as taught by Miyasaka in order to reproduce the audio information with small amount of loss. (Miyasaka: col.17, ll.2-4)</p>
Claim(s) 5	<p><u>Grill shows:</u></p> <p>An audio information reproducing apparatus (p.22, Fig.1) comprising:</p> <p>an audio information source; (p.22, Fig.1, 'Decoder')</p> <p>a buffer memory (p.22, Fig.1, 'Buffer Memory') for storing audio information read from</p>

the audio information source in accordance with a speed magnification (p.20, §4.1.2, 'SpeedControlFactor'); and

signal processing means capable of:

cutting out, successively and in accordance with window functions (e.g., half triangular window, p.24, 1st ¶; see dash line for waveform A of Fig.2a), first portions (e.g., waveform A and D) of the audio information, connecting together the first portions (e.g., waveform C and D, Fig.3c), and rendering the mutually connected first portions to serve as an output for converting a reproducing speed ($1 < \text{SpeedControlFactor} \leq 2$ for time-scale compression, p.22, eq. on last line) in a first channel (see Fig.3c),

{1. The waveform in Fig.2a is a continuous waveform. Therefore, the half-triangular window can be applied to waveform A, B, and D as well as successive waveforms.

2. Waveform C has the same information as waveform A. Therefore, mutually connected waveform C and D is the same as waveform A and D.}

successively cutting out, in accordance with window functions (e.g., half triangular window, p.24, 1st ¶; see dash line for waveform A of Fig.2a), second portions (e.g., waveform B and D) of the audio information, connecting together the second portions (waveform C and D, Fig.3c), and rendering the mutually connected second portions to serve as an output for converting a reproducing speed ($1 < \text{SpeedControlFactor} \leq 2$ for time-scale compression, p.22, eq. on last line), and

{1. The waveform in Fig.2a is a continuous waveform. Therefore, the half-triangular window can be applied to waveform A, B, and D as well as successive waveforms.

2. Waveform B has the same information as waveform A. Therefore, mutually connected waveform C and D is the same as waveform B and D.}

Grill does not show:

rendering the output of the second portions in a second channel;

reproducing the audio information independently through the first and second channels.

Miyasaka teaches:

	<p>rendering the output of the second portions in a second channel; (Fig.1: 106)</p> <p>reproducing the audio information independently through the first and second channels. (Fig.1: 105 and 106)</p> <p>It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the audio reproducing information method of Grill to include the multi-channel time-scaling method of Miyasaka in order to reproduce the audio information independently through the first and second channels. Multi-channel audio signals provide higher audio quality than mono-channel.</p>
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Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent Documents:

[1] 6,115,687 09/2000 Tanaka et al.

[2] 5,781,885 07/1998 Inoue et al.

Foreign Patent Documents:

[3] JP 10-282963 10/1998

[4] JP 05-297891 11/1993

Other Publications:

[5] A. Amir et al., "Using audio time scale modification for video browsing," Proc. 33rd Annual Hawaii International Conference on System Sciences 2000, vol.1, Jan. 2000.

[6] W. Verhelst et al., "An overlap-add technique based on waveform similarity (WSOLA) for high quality time-scale modification of speech," IEEE ICASSP '93, vol.2, pp.554-557, Apr. 1993

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[7] J. Makhoul et al., "Time-scale modification in medium to low rate speech coding," IEEE ICASSP '86, vol.11, pp.1705-1708, Apr. 1986.

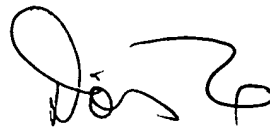
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tim Lao whose telephone number is 703-305-8955. The examiner can normally be reached on M-F, 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 703-305-4827. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tim Lao
Examiner
Art Unit 2655

TL
05/03/04



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SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600